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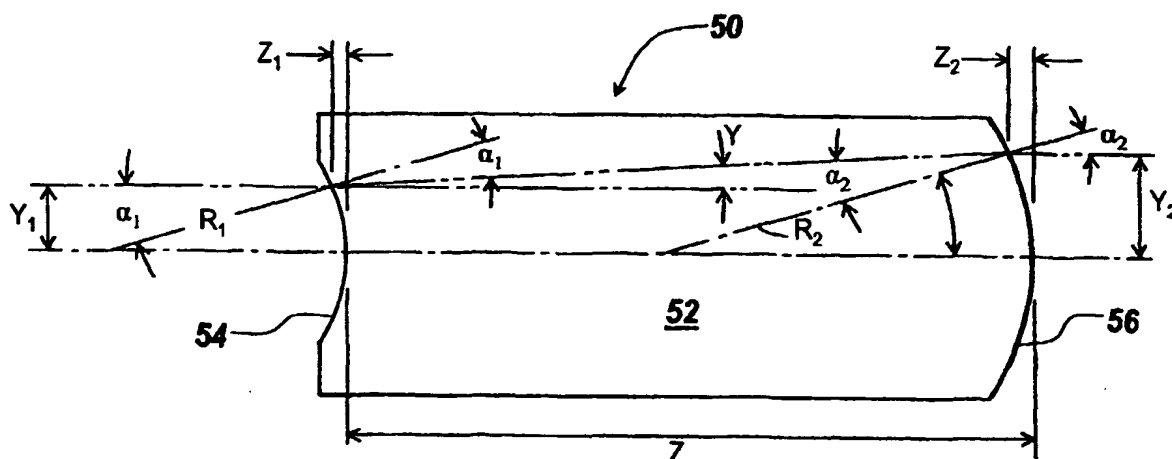
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(54) Title: SINGLET TELESCOPES WITH CONTROLLABLE GHOSTS FOR LASER BEAM FORMING



(57) Abstract: A singlet telescope (50) is provided for reshaping the laser beam to a larger or smaller diameter while maintaining the inherent quality of the beam. Applications for the singlet telescope (50) include intercavity expansion to accommodate the damage threshold of various components, expansion of beams to match the size of different wavelengths for final collimation, and shrinking of beams to provide high irradiance for nonlinear processes such as optical parametric oscillation and frequency doubling, with the above applications usually requiring low power magnification or demagnification. Problems involving the utilization of these telescopes over wide temperature ranges and ghost reflections in which a light is reflected back to a pumping laser are minimized with the singlet construction, with the ghost reflections potentially creating damage of components including self-damage or breakdown of air, as well as damage to a Q-switched resonator which causes pre-lasing.



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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/05812

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : G02C 9/00, 13/08, 3/02

US CL : 359/719, 668, 796

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 359/718, 719, 668, 796

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X — A	US 6,195,208 B1 (NGOI et al) 27 February 2001 (27.02.2001), col. 1, lines 8-14; col. lines 60-63; Fig. 5.	1, 6 and 8-12 2-5, 7, 13 and 14
X — A	US 5,181,224 A (Snyder et al) 19 January 1993 (19.01.1993), col. 2, lines 29-31, 62-63; col. 4, lines 2-6; Fig. 3B.	1, 6 and 8-12 2-5, 7, 13 and 14

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

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